

O = w/ Deanne Wayson

CBIS

For Next Week

MS - 1	WM - 1	SI - 18
6	-6	SI - 35
7.	-12	SI - 34.
MS + 13	-15	-51
I - 1	-16	SI
I - 2	NI - 4	PI - 1
4	5	2
8	SP - 1	3
11	-11	5
22	-15	10
20	-19	12
OU - 6	-26	13
OU - 1	TS - 1	PI - 1
2	-4	-4
3	-13	-5a, 6
4	-9	-9a
5	-10	SO - 1
7	SI - 1	-2
10	-3	-10
11	4	-11
13	5	-12
IS - 1	6	-13
-2	7	-16
-5	9	-17
-6	17	-23

SI - 24

CB12

SO - 53

- 54

- 55

- 61

~~- 23~~

- 76.

~~- 77~~

- 71

NS - 1

- 4

- 5

- 6.

- 7

- 8

- 11

- 13

- 14.

- 21

- 23a

- 23b.

- 39.

- 51

- 54a, b

- 55a

VM - 16

- 17

- 19

- 20

- 23

- 24

- 25

- 26

- 27.

- 29.

- 31

- 32

- 33.

CT - 1

2

3.

4.

8

12

15.

22.

24.

27a, b

29.

SC - 1a

2

3

4

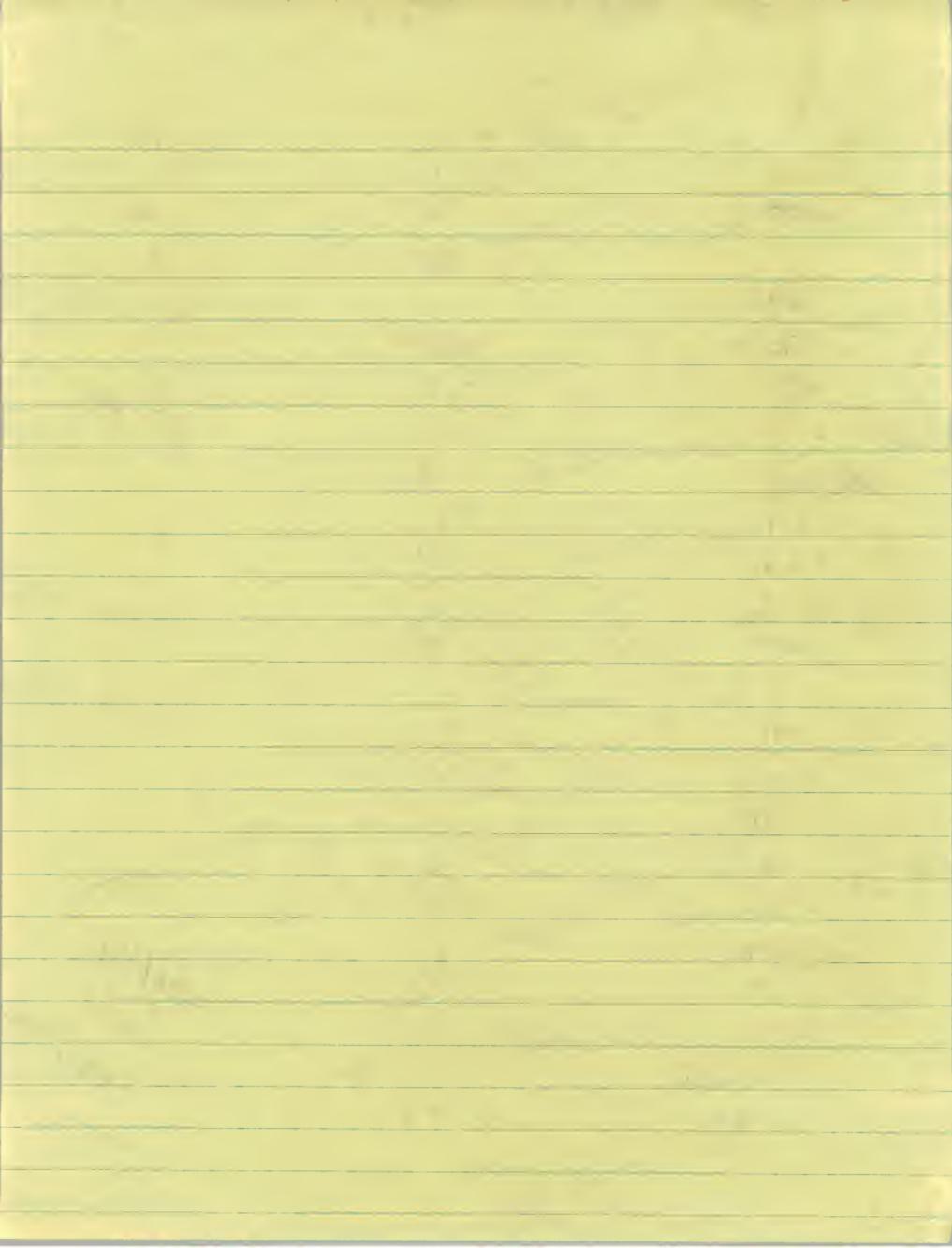
5.

7.

8a, b.

11

MAMAP
Tues
fast Mon.



For Next Week

MS-1	WM-1	SI-18
6	-6	SI-35
7.	-12	SI-34.
MS-13	-15	-51
I-1	-16	52
I-2	WF-4	PF-1
4	5	2
8	SP-1	3
11	-11	5
22	-15	10
20	-19	12
DU-6	-14	13
DU-1	TS-1	PC-1
2	-4	-4
3	-13	-Sa, G
4	-9	-9a
5	-10	SO-1
7	SI-1	-2
10	-3	-10
11	4	-11
13	5	-12
IS-1	6	-13
-2	7	-14
-5	9	-17
-6	17	-23

S6-24



SO - 53

- 54

- 55

- 61

~~- 63~~

- 76.

- 77

- 71

NS - 1

- 4

- 5

- 6.

- 7

- 8

- 11

- 13

- 14.

- 21

- 23_a

- 23_b.

- 39.

- 51

- 54_{a, b}

- 55_a

VM - 16

- 17

- 19

- 20

- 23

- 24

- 25

- 26

- 27.

- 29.

- 31

- 32

- 33.

CT - 1

2

3.

4.

8

12

15.

22.

24.

27_a, 6

29.

SC - 1a.

2

3

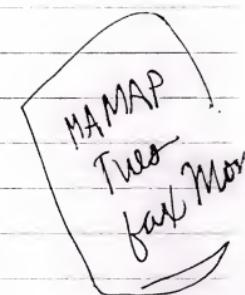
4

5.

7.

8a, b.

11





Information Services Industry Directions

Executive Presentation

MS-1

INPUT

Notes



INPUT

Market Research and Consultancy

Information Services Industry

15 Years in Business

100 Employees

MS-6

INPUT

Notes



INPUT

California, New York, Washington D.C.,
London, Paris, Tokyo

Primary Research Emphasis

Senior Executives Experienced in
Information Services

Forecast from Comprehensive Data Base

INPUT

MS-7

Notes



- Introduction
- Information Systems Trends
- "Outsourcing"
- Information Services Markets
- Competition
- Conclusion

INPUT

MS-13

Notes



Information Systems

I-1

INPUT

Notes



Fundamental Driving Forces

Key Business Trends:

- Shorter product life cycles
- More customization/specialization
- Narrower market segments
- Higher impact of technology
- More competition from overseas vendors

INPUT

I- 2

Notes



Blocking Factors

- Infrastructure gridlock
- Lack of qualified in-house personnel
- Existing applications portfolio
- Organizational response time

Create opportunities for the information services industry

I- 4

INPUT

Notes



Where's the Productivity?

I- 8

INPUT

Notes



Make vs. Buy

I- 11

INPUT

Notes



Limits to Growth

- Absorption rate
 - Implementation
 - Education and training
 - Organization changes
 - Resistance to change
 - Logistics

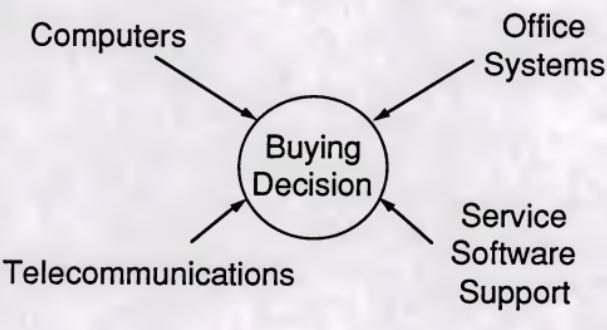
INPUT

I- 22

Notes



Complexity



I- 20

Notes



Outsourcing is the
contracting of information
systems (IS) functions to
external vendors.

OU-6

INPUT

Notes



What is it?

Why is it becoming
a major factor?

OU-1

INPUT

Notes



Beyond Products: Service-Based Strategy

HBR March/April 1990

OU-2

INPUT

Notes



Key Findings

- Value added from services
- Technology enhances services
- Services enable competitive differentiation

Source: HBR Article

OU-3

INPUT

Notes



Recommendations

- Focus on core services
- Outsource other activities

Source: HBR Article

OU-4

INPUT

Notes



Outsourcing

- Outsource non-competitive activities
- Outsourcing builds flexibility
- Outsourcing allows focus

Source: HBR Article

INPUT

OU-5

Notes



IS Outsourcing Areas

1. Development
2. Operation and maintenance

OU-7

INPUT

Notes



"Outsourcing" vs. Buying Services

1980s: Services achieved recognition

1990s: Overcome prejudice against buying management services

OU-10

INPUT

Notes



"Outsourcing" vs. Buying Services

- Greater commitment on part of buyer
- "Partnership"
- Responsibility/risk for vendors

INPUT

OU-11

Notes



Outsourcing Vendors

- Approaches differ greatly
- Variety of capabilities needed
- Partnerships/alliances result

INPUT

OU-13

Notes



Information Services Industry Trends

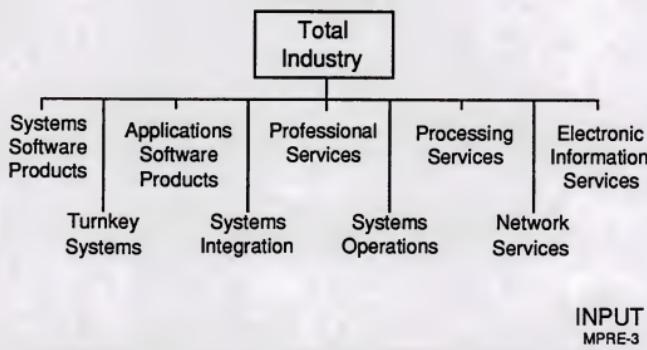
INPUT
MPRE-34

Notes

IS- 1



Information Services Industry Structure



Notes



Information Services Market

- Major Trends
 - Globalization of information services creates market opportunities
 - Vendor consolidation continues
 - Profit opportunities shift from equipment to services, software

INPUT

Notes



Key Trends for the 1990s

- Products & services markets blurring
- Changing market structure
- Internationalization
- Standards
- Vendor consolidation

INPUT
MPRE-35

Notes



Worldwide Markets

INPUT
MPRE-184

Notes

WM- 1

© 1990 by INPUT. Reproduction Prohibited.

INPUT



Globalized Information Systems Facilitators

- Telecommunications networks
- Support services
- Standards

INPUT
MPRE-40

Notes



Counter-Trends to Globalization

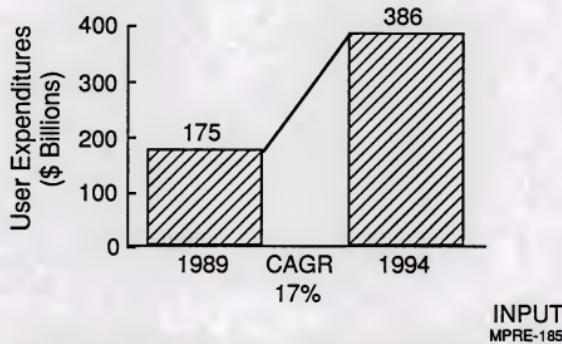
- Cultural "non-fits"
- Preference for local products and services
- Focus on narrow, niche markets
- National restrictions

INPUT
MPRE-41b

Notes



Worldwide Information Services Market, 1989-1994



Notes



Information Services Market Penetration Worldwide

	Expenditures (\$ Billions)	
	1989	1994
Information Systems	840	1,420
Information Services*	170	380
Penetration	20%	27%

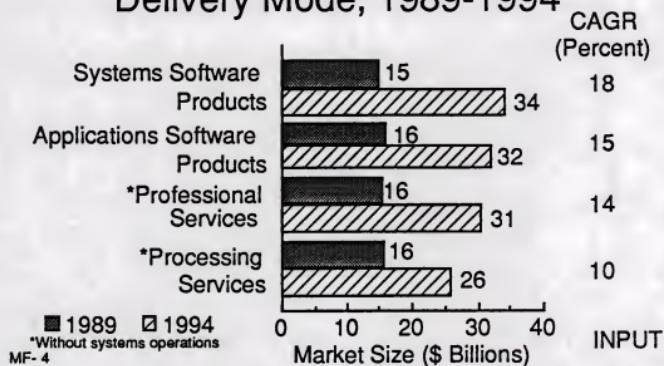
* Less electronic information services

INPUT
MPRE-186

Notes



U.S. Information Services Market by Delivery Mode, 1989-1994

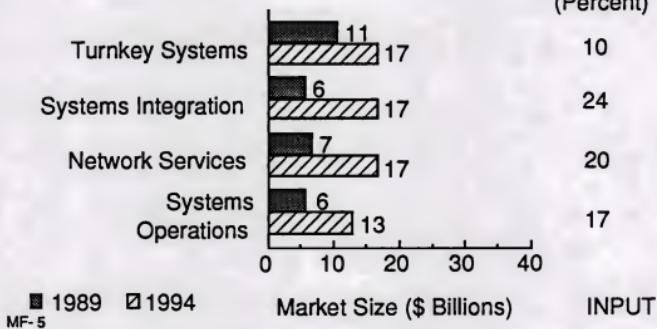


Notes



U.S. Information Services Market by Delivery Mode, 1989-1994

CAGR
(Percent)



Notes



Software Products

INPUT
MPRE-407

Notes



Software Products Market Issues

- Software complexity increasing
- Development resources decreasing
- Product life cycles
- Capital supply constraints
- Redundant software products

INPUT
MPRE-409

Notes



Leading Software Market Trends

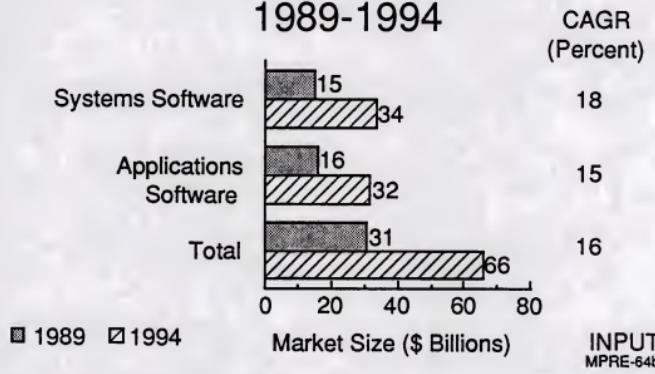
- Mergers/acquisitions
- Alliances
- Open systems architectures
- Products and services markets blurring
- Cooperative processing models

INPUT

Notes



U.S. Software Products Market 1989-1994



Notes



New/Hot Software Areas

- CASE/development tools
- AI—rejuvenated
- Data center management
- UNIX
- Image processing
- DSS/EIS

INPUT

Notes



Turnkey Systems/VARs

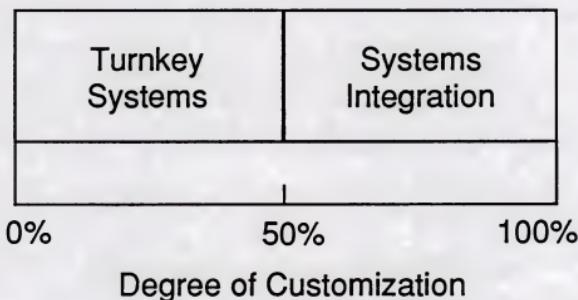
INPUT
MPRE-71

Notes

TS-1



The Customization Spectrum



INPUT
MPRE-72

Notes



Turnkey Systems Market Driving Forces

- Distributed solutions
- Customization
- Growth of support services
- Software applications required
- Account control at low end of spectrum

INPUT
MPRE-79

Notes



Turnkey Systems

- Major Trends
 - Declining price discounts from manufacturers
 - Movement into software-only mode by turnkey firms
 - Impact of systems integration at high end of market

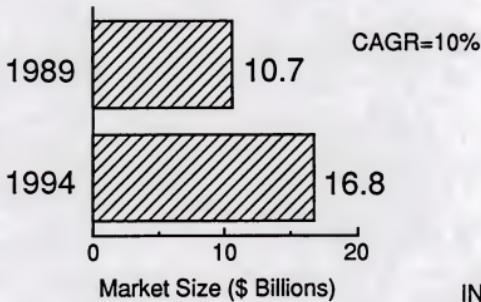
INPUT

Notes

TS-9



U.S. Turnkey Systems Market 1989-1994



INPUT
MPRE-76

Notes



Systems Integration

SI- 1

INPUT

Notes



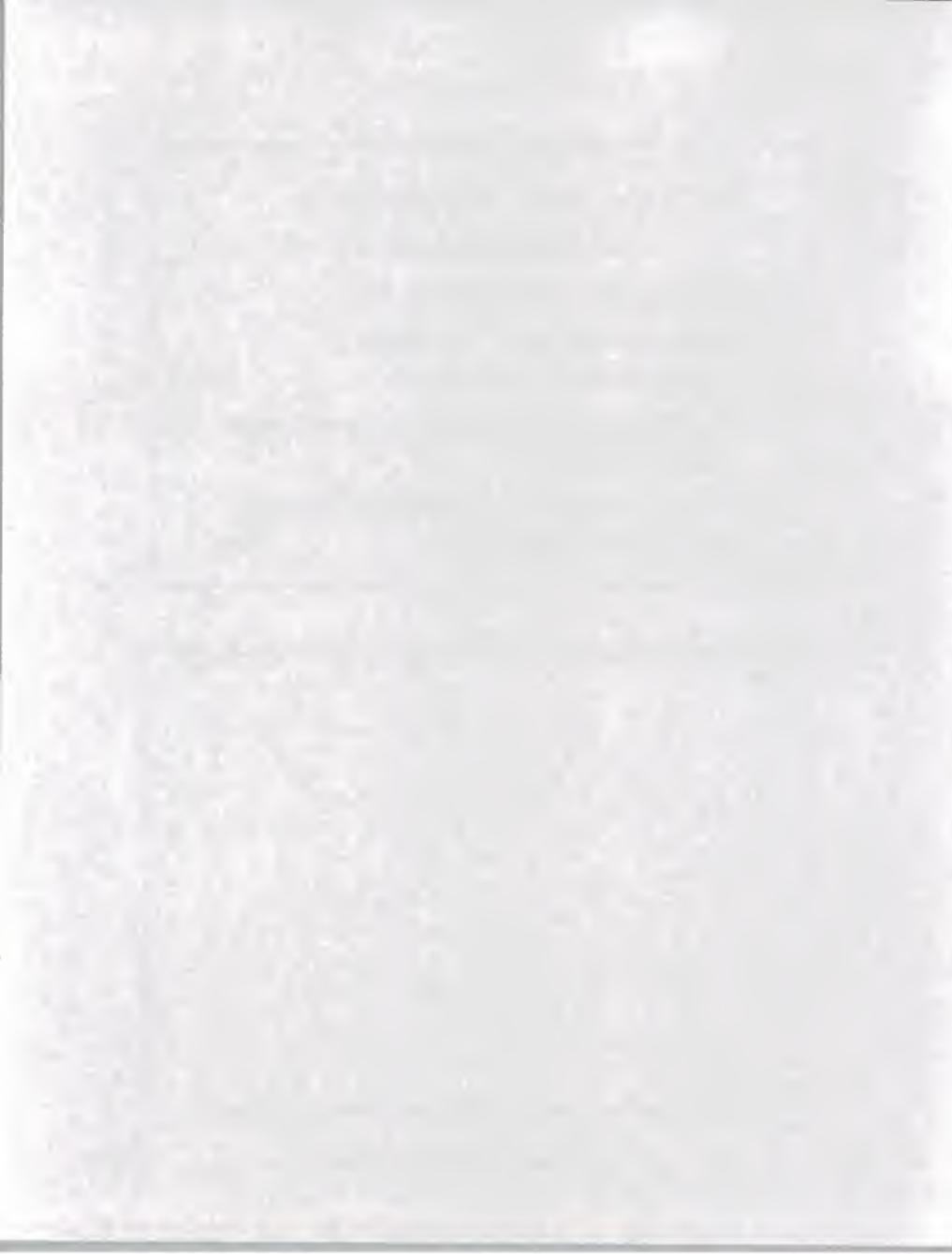
Systems Integration: Globalized Activity

- Gaining overseas acceptance
- Prime contractors need local subcontractor relationships
- Big players with deep pockets and high visibility required
- Leads to systems operations (facilities management) contracts

INPUT

SI- 3

Notes



Major SI Buyer Issues

- Core business focus
- Competitive demands
- Increasingly complex solutions

SI- 4

INPUT

Notes



Major SI Buyer Issues

- Users becoming buyers
- New technology application
- Unavailable skills

SI- 5

INPUT

Notes



Major SI Vendor Issues

- Consolidations and alliances
- Focus on repeatable solutions
 - Risk reduction
 - Productivity

SI- 6

INPUT

Notes



Major Vendor SI Issues

- Full service suppliers
 - "Business change" consulting
 - Systems operation
- Increasing competition
 - Skills
 - Clients

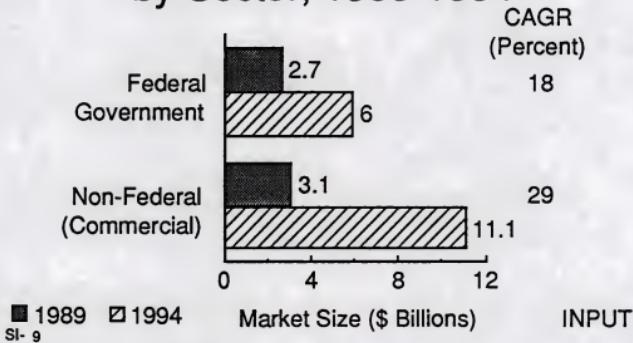
SI- 7

INPUT

Notes



U.S. Systems Integration Market by Sector, 1989-1994



Notes



SI Competition Ranked by Vendors

- Commercial
 - Andersen Consulting
 - EDS
 - IBM
 - DEC

By Number of Mentions
SI-17

INPUT

Notes



SI Competition Ranked by Vendors

- Federal
 - CSC
 - EDS
 - IBM
 - BCS, PRC (tied)
 - TRW, MMDS (tied)

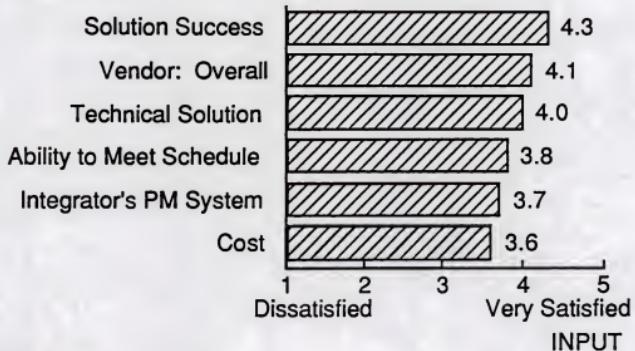
SI-18 By Number of Mentions

INPUT

Notes



Buyer/User Satisfaction



SI-35

Notes



SI Market Factors

- Demand for connectivity
- Major infrastructure rebuilding
- User management trend
- Application complexity

SI-34

INPUT

Notes



Vendor Challenges

- System integration bidding
 - Costs
 - Skill set
- Product management
 - Managing the user

SI-51

INPUT

Notes



Vendor Challenges

- Risk containment
 - Cost premium
 - Companywide responsibility
 - User benefit

SI-52

INPUT

Notes



Professional Services

PF-1

INPUT

Notes



Professional Services Market Driving Forces

- Changing U.S. workforce
- New hardware, software, and communications products
- Growing application backlog

INPUT

PF-2

Notes



Professional Services Market—Driving Forces

- Lack of IS in-house expertise
- Rising labor costs
- Low-cost market entry
- Systems complexity

INPUT

PF-3

Notes



Professional Services Market Growth Inhibitors

- More capital-intensive business means higher added-value services
- Competition from:
 - Packaged software products
 - In-house departments or subsidiaries

INPUT

PF-5

Notes



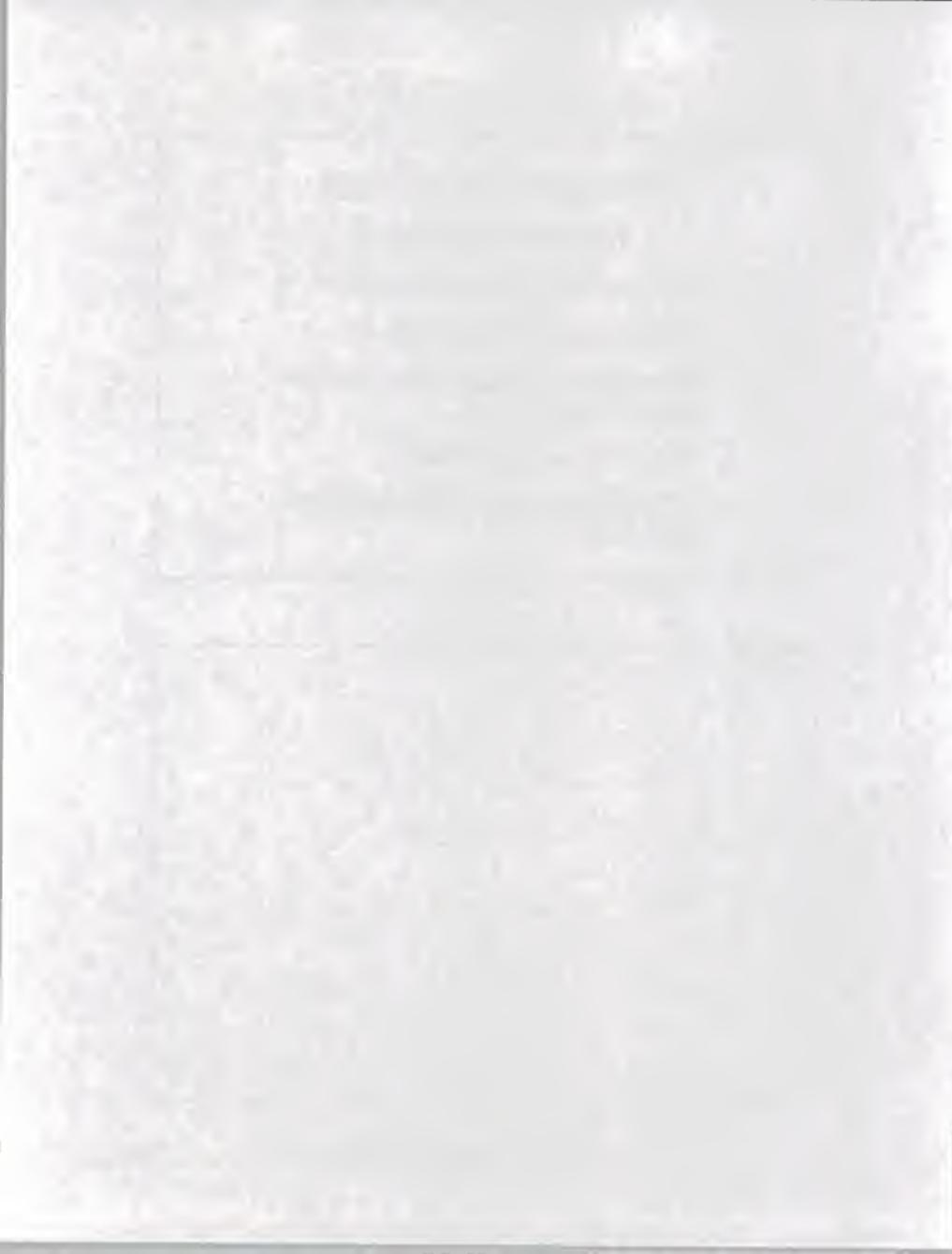
Professional Services Market Inhibitors

- Lack of 'professional' status
- Lack of qualified personnel
- Investment required for internal education/training
- Unsuccessful projects
- Improved applications software products

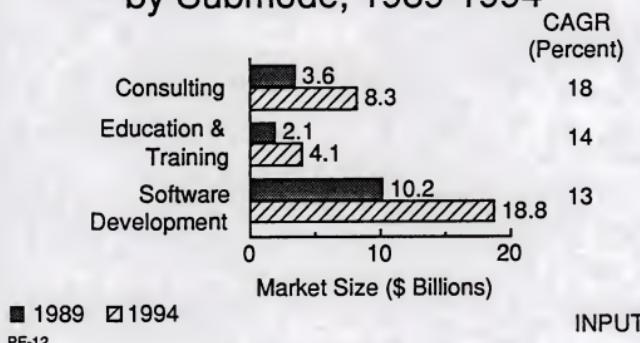
INPUT

PF-10

Notes



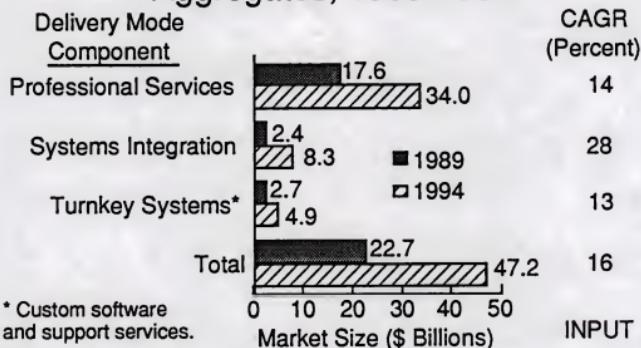
U.S. Professional Services Market by Submode, 1989-1994



Notes



U.S. Professional Services Market Aggregates, 1989-1994



Notes



Processing Services

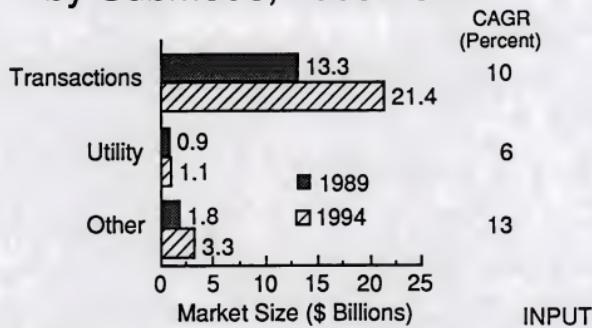
PC-1

INPUT

Notes



U.S. Processing Services Market by Submode, 1989-1994



PC-4
Notes



Transaction Processing

- Major Trends
 - Continuing trend for users "outsourcing"
 - Customer inertia
 - Vendor ability to deliver proven results quickly

PC-5a

INPUT

Notes



Transaction Processing

- Major Trends

- Strong vendor positions in specific niches
- Continual improvement in workstation/PC price performance

PC-5b

INPUT

Notes



Vendor Activity

- ADP
 - Continuing profit/revenue improvements
 - Buying and selling businesses
 - Focusing on basic markets

PC-9a

INPUT

Notes



Systems Operations

SO- 1

INPUT

Notes



“Old”
Facilities Management

- Focus on computer operations

“New”
Systems Operations

- Development, planning, control,
operations

INPUT

so- 2

Notes



Systems Operations Driving Forces

- Increasing complexity of operations
- Scarcity and expense of required talents
- Costs and problems of systems upgrades
- Service level requirements
- Backup requirements

SO-10

INPUT

Notes



Systems Operations Driving Forces

- Systems integration creates opportunities
- Reduction of costs through sharing
 - People
 - Software
 - Computer systems
 - Networks

INPUT

SO-11

Notes



Systems Operations and Competitive Advantage

- Operations advantages hard to achieve
- Avoidance of operations disadvantages imperative
- Advantage/disadvantage comes from applications

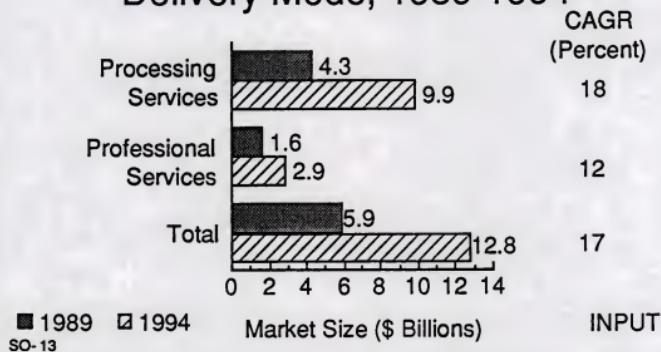
INPUT

SO-12

Notes



U.S. Systems Operations Market by Delivery Mode, 1989-1994



Notes



Trends in Systems Operations

- Network management contracts
- Development and operations in agreements
- Shared resources approach
- Mixed hardware offerings
- Vertical market focus

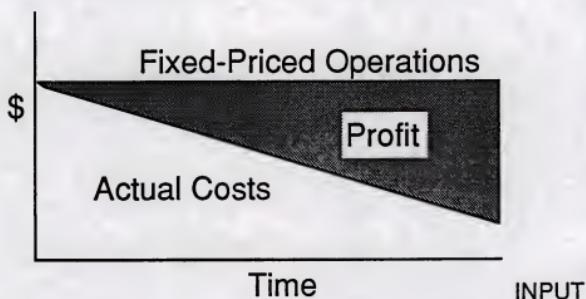
INPUT

SO-16

Notes



Systems Operations Efficiency Yields Profits



SO-17

Notes



U.S. Systems Operations Growth Perspectives

	Growth Rates (Percent)
<u>Vendors' View:</u>	
Commercial	21
Federal	12
<u>INPUT Forecast:</u>	
Commercial	17
Federal	15

INPUT

SO-23

Notes



Industry Margins Vendors' View

	Profit Margins (Percent)
Commercial	15
Federal	9

INPUT

SO-24

Notes



(50) - 53

- 54

- 55

- 61

~~- 53~~

- 76.

- 77

- 71

* NS - 1

- 4

- 5

- 6.

- 7

- 8

- 11

- 13

- 14.

- 21

- 23s

- 23L.

- 39.

- 51

- 54a, b

- 55G

* VM - 16

- 17

- 19

- 20

- 23

- 24

- 25

- 26

- 27.

- 29.

- 31

- 32

- 33.

CT - 1

2

3.

4.

8

12

15.

22.

24.

27a, b

29.

SC - 1a

2

3

4

5.

7.

8a, b.

11

MAMAP
Tres
falt Mo



Who is the SO Buyer?

- Varies greatly—dependent on prospect
- Individual more than team
- Customized marketing required

SO-53

INPUT

Notes



What is the SO Buyer Looking For?

- Depends on the prospect
- Requires customized marketing

INPUT

SO-54

Notes



What are the SO Buyer's Key Motivators?

- Most often, solving a problem
- Reducing risk and time often important
- Scarcity of people

SO-55

INPUT

Notes



Platform Systems Operations

Prospect View of System Utility Relationship

- "Technology" rather than "application" solution
- View could be:
 - Short-term, solve a problem
 - Long-term, provide basic architecture

INPUT

SO-61

Notes



Perceived SO Inhibitors

- Cost
- Employee loyalty
- Vendor employee turnover
- Loss of control
- Acceptance by user community

INPUT

SO-76

Notes



SO Vendor Issues

- Account control
- Potential conflicts of interest
- Profit maximization vs. performance

SO-77

INPUT

Notes



Conclusions

- Economic factors will continue to create user demand for systems operations
- Commercial sector is most attractive
- Profits through productivity and technology leverage

SO-71

INPUT

Notes



Network Services

INPUT
MPRE-127

Notes

NS-1

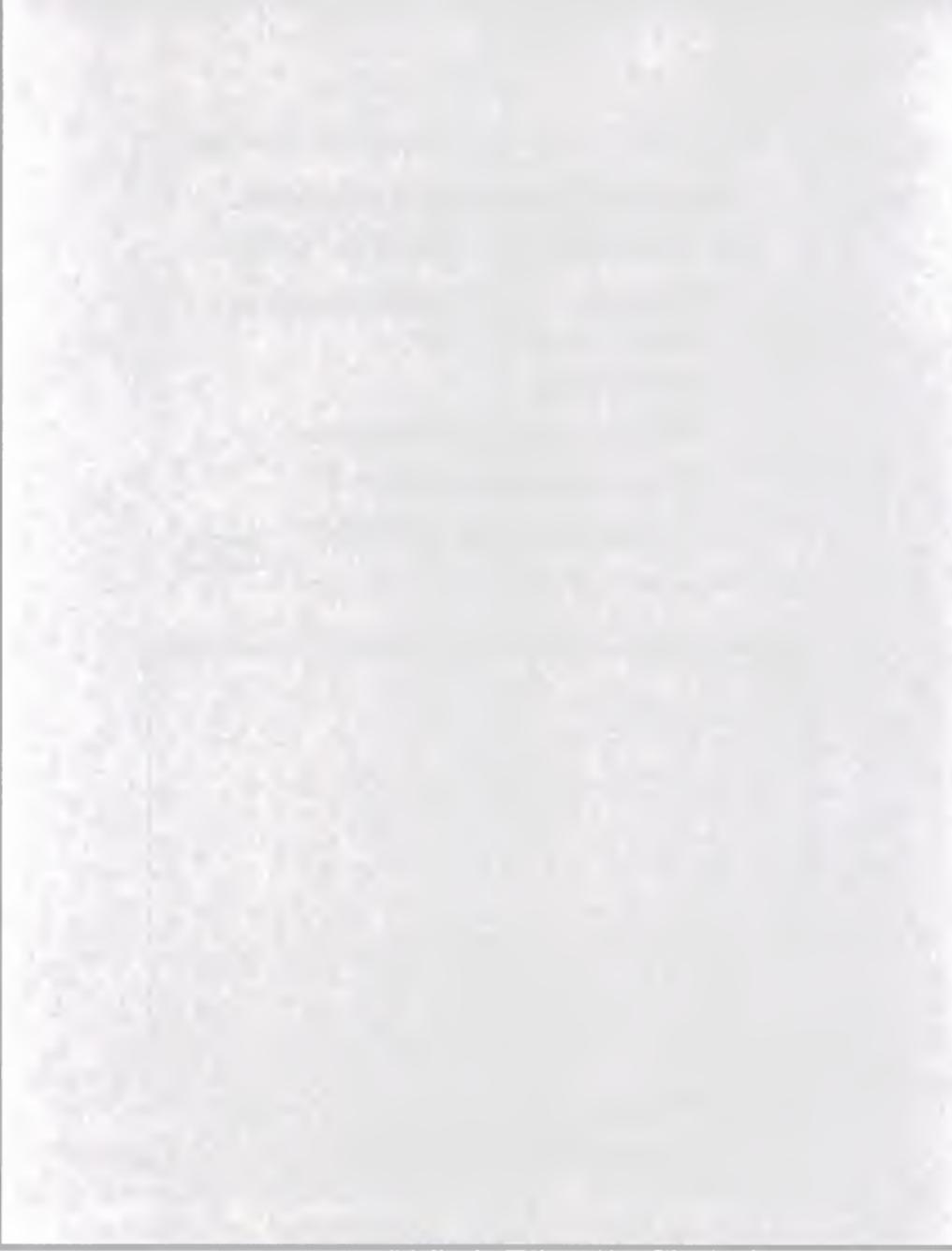


Network/Electronic Information Services Market—Driving Forces

- Business need for rapidly available electronic information
- RBOC entry
- Network management services
- Voice information services
- Transaction "electronification"

INPUT
MPRE-131

Notes



Network/Electronic Information Services Market—Driving Forces

- PC population
- Consumer information services
- ISDN
- EDI popularity
- Wide-area networking

INPUT
MPRE-404

Notes



Network/Electronic Information Services Market—Inhibiting Forces

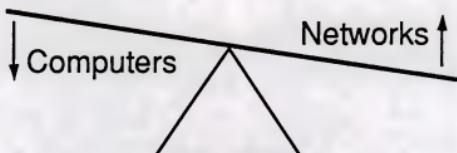
- Data overload
- CD/ROM as alternative
- Profitability questions

INPUT
MPRE-405

Notes



1990s Trend



INPUT
MPRE-232

Notes



1990 Trend

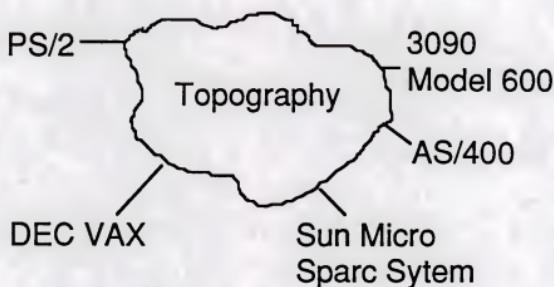
- Network = Power
Consummable
Embedded storage,
processing, software
- Computer = Device
Discrete replacement
Embedded communications
link

INPUT
MPRE-233

Notes



Network 1990



INPUT
MPRE-235

Notes



The Network Will Become the System

- Implications for users
 - Nodes are almost equal in power
 - Telecommunications skills are vital
 - IS management at many nodes
 - More complex systems design

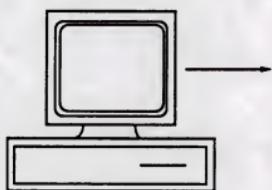
INPUT
MPRE-377

Notes



Network Environment

Intelligent Workstation = Window to Information Services



Local
Distributed
Central
External

INPUT
MPRE-12

Notes



Network Services Issues

- ISDN service availability
- Rapid technology change
- Lack of standards
- Domestic regulations
- International regulations
- Investment costs

INPUT
MPRE-216

Notes



Electronic Mail Services

- Major Trends
 - Aerospace, petroleum industry use of X.400
 - Facsimile as competitor
 - Growth of in-house E-mail networks

INPUT

Notes

NS-23a



Electronic Mail Services

- Major Trends
 - Voicemail as alternative
 - Corporate controls on communications expense
 - Current lack of inter-company directory; X.500 will remedy

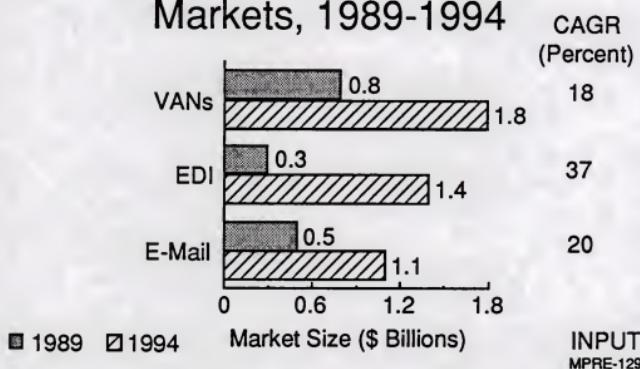
INPUT

Notes

NS-23b



U.S. Network Applications Services Markets, 1989-1994



Notes



Trends In Electronic Mail

- Implementation of X.400 standard
- Conformance tests
- Intercorporate E-mail
- Entry of RBOCs
- PC/WS E-mail growth

INPUT

Notes



Electronic Information Services (Data Bases) Markets

- Major Trends
 - Proliferation of PCs, modems
 - Consumer information services
 - Immediacy of business information needs

INPUT

Notes



Electronic Information Services (Data Bases) Markets

- Major Trends
 - Improved access to large numbers of data bases
 - AT&T's recent authorization to compete

INPUT

Notes

NS-54b



Electronic Information Services (Data Bases) Markets

- Major Trends
 - Possible data saturation
 - CD/ROM, FM broadcast, X.25 TV as alternatives
 - Declining growth rate of new business users

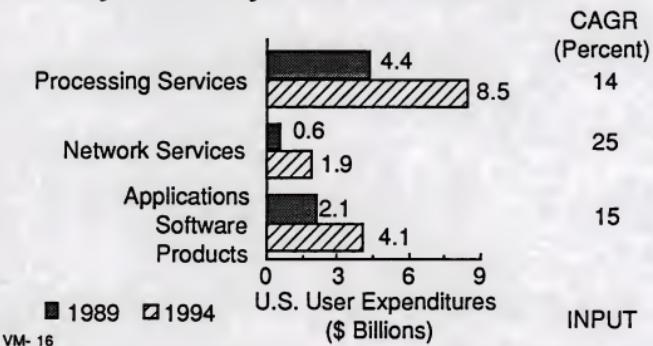
INPUT

Notes

NS-55b



Banking and Finance Sector Forecast by Delivery Mode, 1989-1994



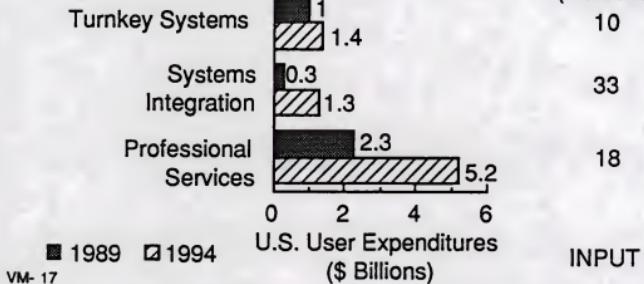
Notes



Banking and Finance Sector Forecast by Delivery Mode,

1989-1994

CAGR
(Percent)



Notes



Banking/Finance Industry Trends—Examples Changing Outlook for Individual Products/Services

- Product creation/evolution proceeding at more rapid pace
- 24 hour/automated trading systems
- Increased demand for electronic information services

INPUT

VM- 19

Notes



Banking/Finance Industry Trends—Vendor Impact Extension into Multiple Lines of Business

- Good for consulting, systems integration
- Mixed for software, processing services, turnkey

VM- 20

INPUT

Notes



State and Local Government Driving Forces

- Need for new programs and services
- More reliance on information
- Budget pressures
- Expanding wealth of technology
- "Unique" applications

INPUT

VM- 23

Notes



State and Local Government Driving Forces

- Changes in information systems organization
- Lack of internal staff expertise
- Reliance on information services vendors

VM- 24

INPUT

Notes



Issues for IS Departments

- Rising expectations of key users and officials
- User demands for more complex solutions
- Planning for changes in technology
- Productivity and backlogs
- Integration of data/technology applications
- Budgeting and funding

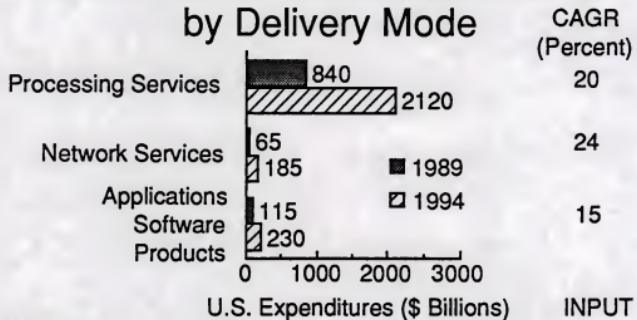
INPUT

VM- 25

Notes



State and Local Government Sector Information Services Expenditures by Delivery Mode

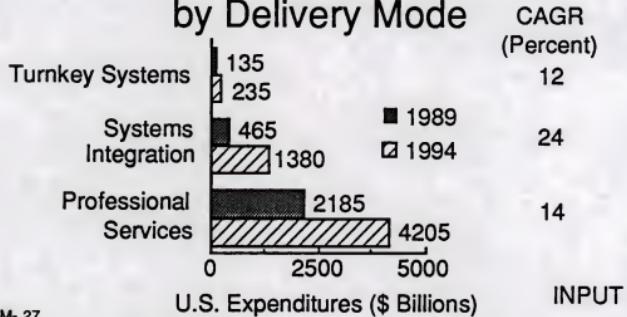


VM- 26

Notes



State and Local Government Sector Information Services Expenditures by Delivery Mode



VM- 27

INPUT

Notes



Federal Government Sector Issues

- 'Peace dividend'
- Cost containment
- Acquisition reforms
- Budget deficit control measures

VM- 29

INPUT

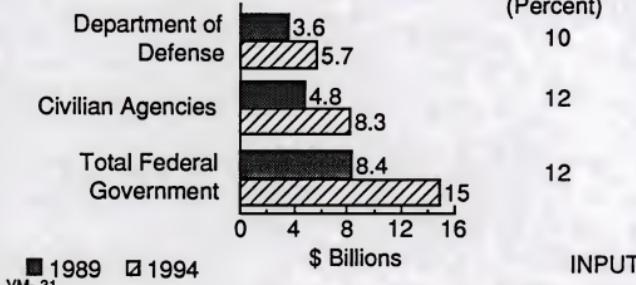
Notes



Federal Government Sector Market Forecast

1989-1994 (Calendar Year) CAGR

(Percent)



Notes



Federal Government Sector Driving Forces

- Rising service demands
- Equipment obsolescence
- High maintenance costs
- End-user computing needs

INPUT

VM- 32

Notes



Federal Government Sector Driving Forces

- Connectivity requirements
- Improved security/privacy demands
- Presidential priority programs

VM- 33

INPUT

Notes



Competitive Trends

CT-1

INPUT

Notes



Vendor Activities Demonstrate 1990s Trends

- Andersen Consulting
- Computer Associates
- Computer Sciences
- Electronic Data Systems

CT-2

INPUT

Notes



Vendor Activities Demonstrate 1990s Trends

- Microsoft
- Oracle
- Digital Equipment
- IBM
- Japanese vendors

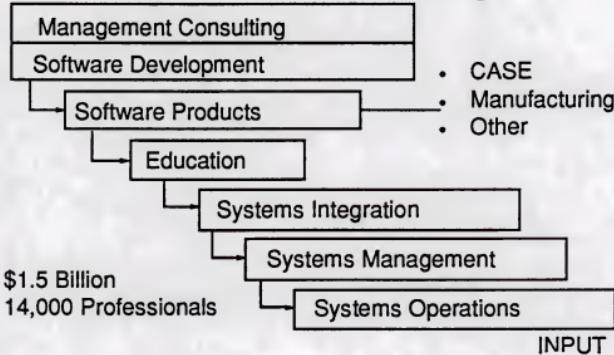
INPUT

CT-3

Notes



Andersen Consulting



Notes



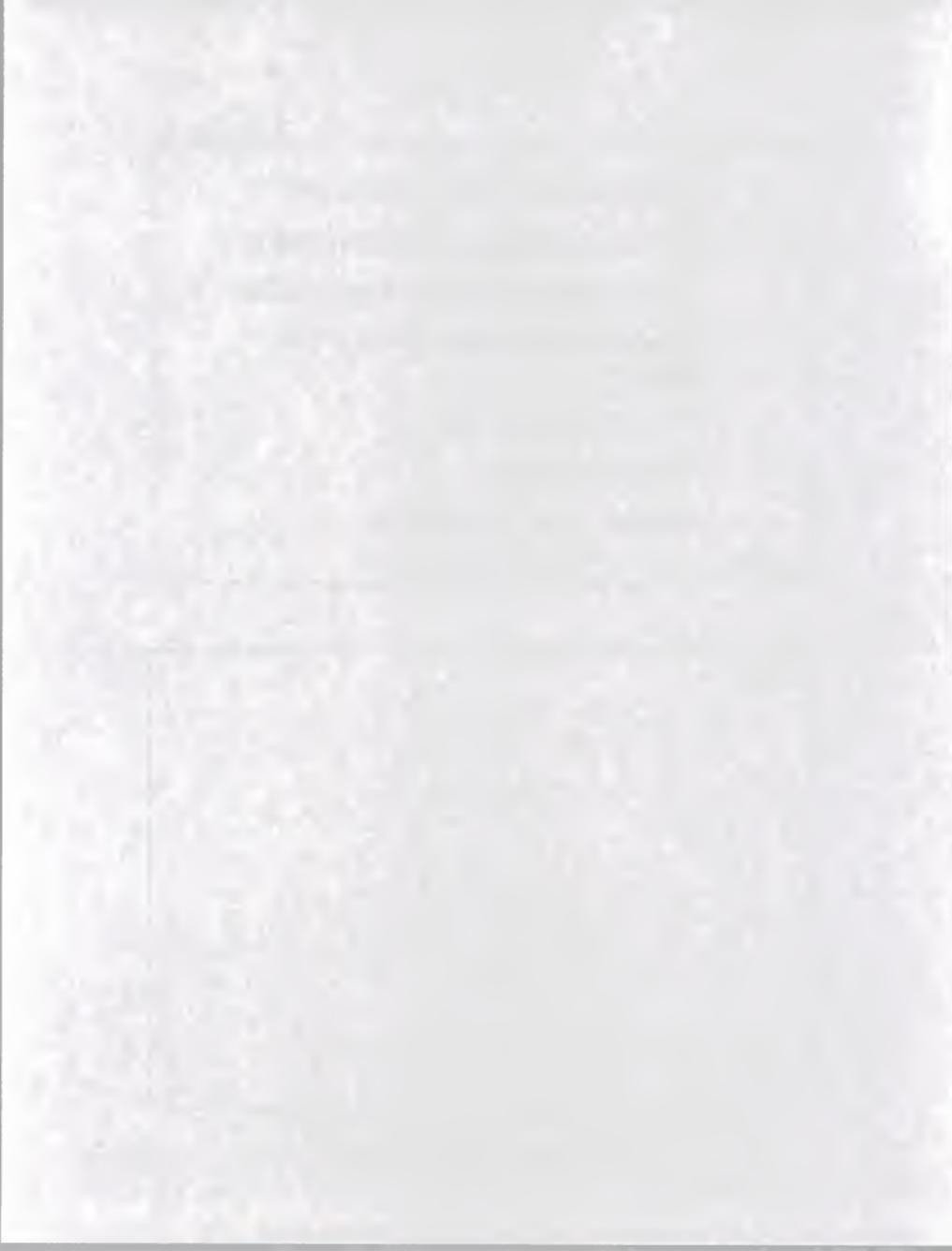
Computer Sciences Corp

- Continues strong in federal markets
 - Primarily professional services/SI
- Resurgent interest in commercial markets
 - Health and insurance
 - Tax and credit
 - Professional services/SI

INPUT

CT-8

Notes



EDS

- Industry leader in systems operations
- Aiming for very large accounts
- Industry-oriented
 - Finance
 - Insurance
 - State and local government
 - Banking

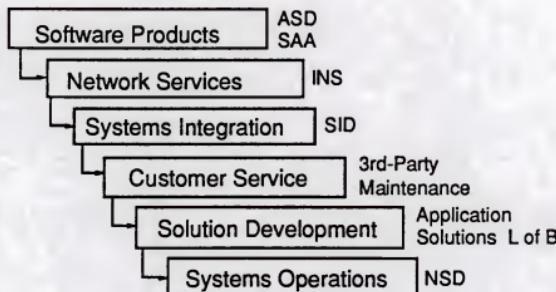
INPUT

CT-12

Notes



IBM

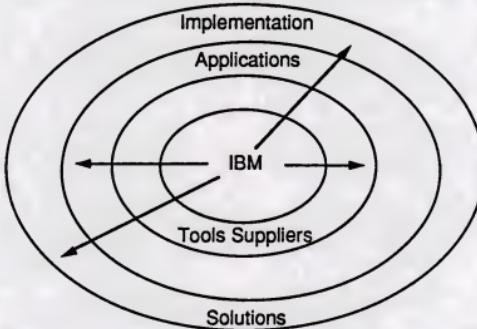


CT-15

Notes



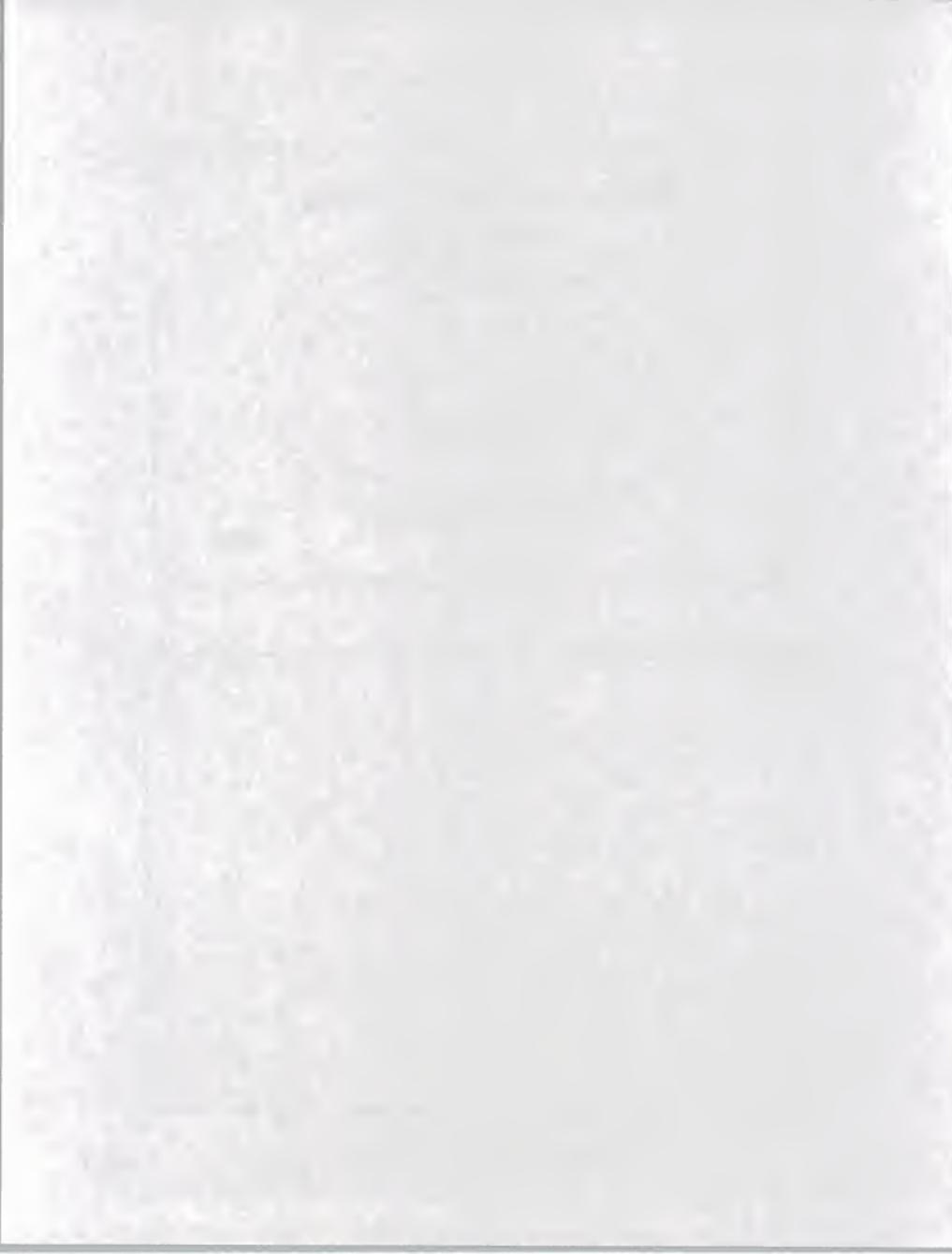
IBM Investment Strategy



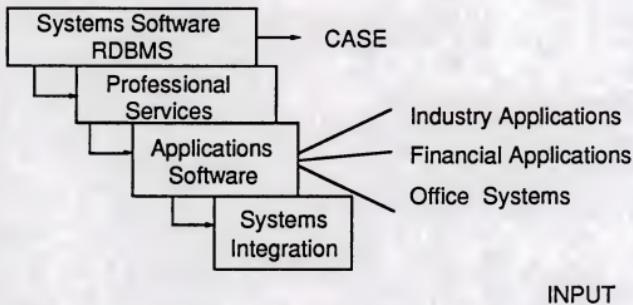
CT-22

INPUT

Notes

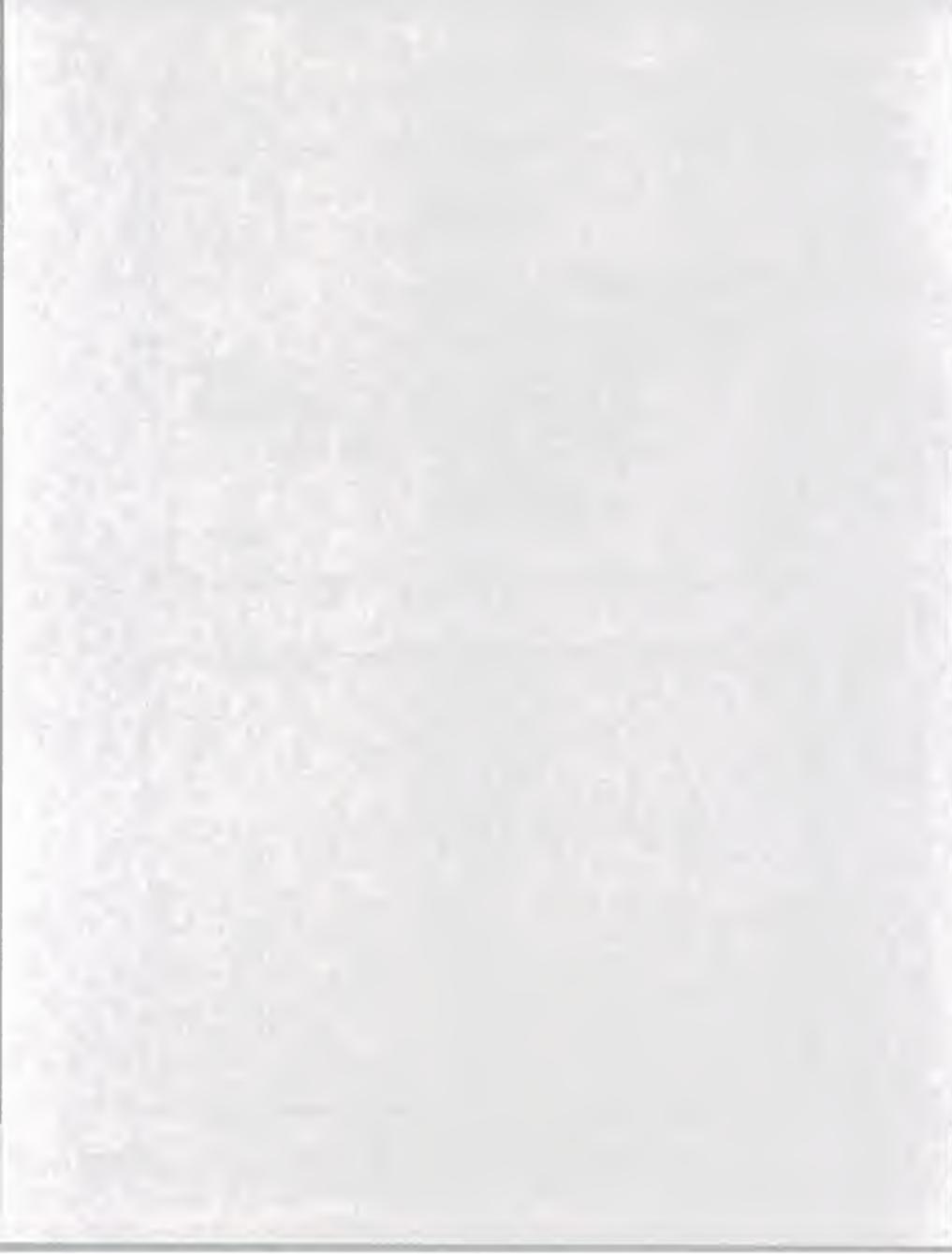


Oracle



CT-24

Notes



European Companies

- CAP Gemini Sogetti (CAP-SESA) is parent of CAP GEMINI AMERICA (CGA)
 - Close to \$1 billion in 1989
 - Focus on professional services

INPUT

CT-27a

Notes



European Companies

- Aggressive acquirer
- Will not attack operations market directly
 - Provide support services
 - Emphasizes development market

CT-27b

INPUT

Notes



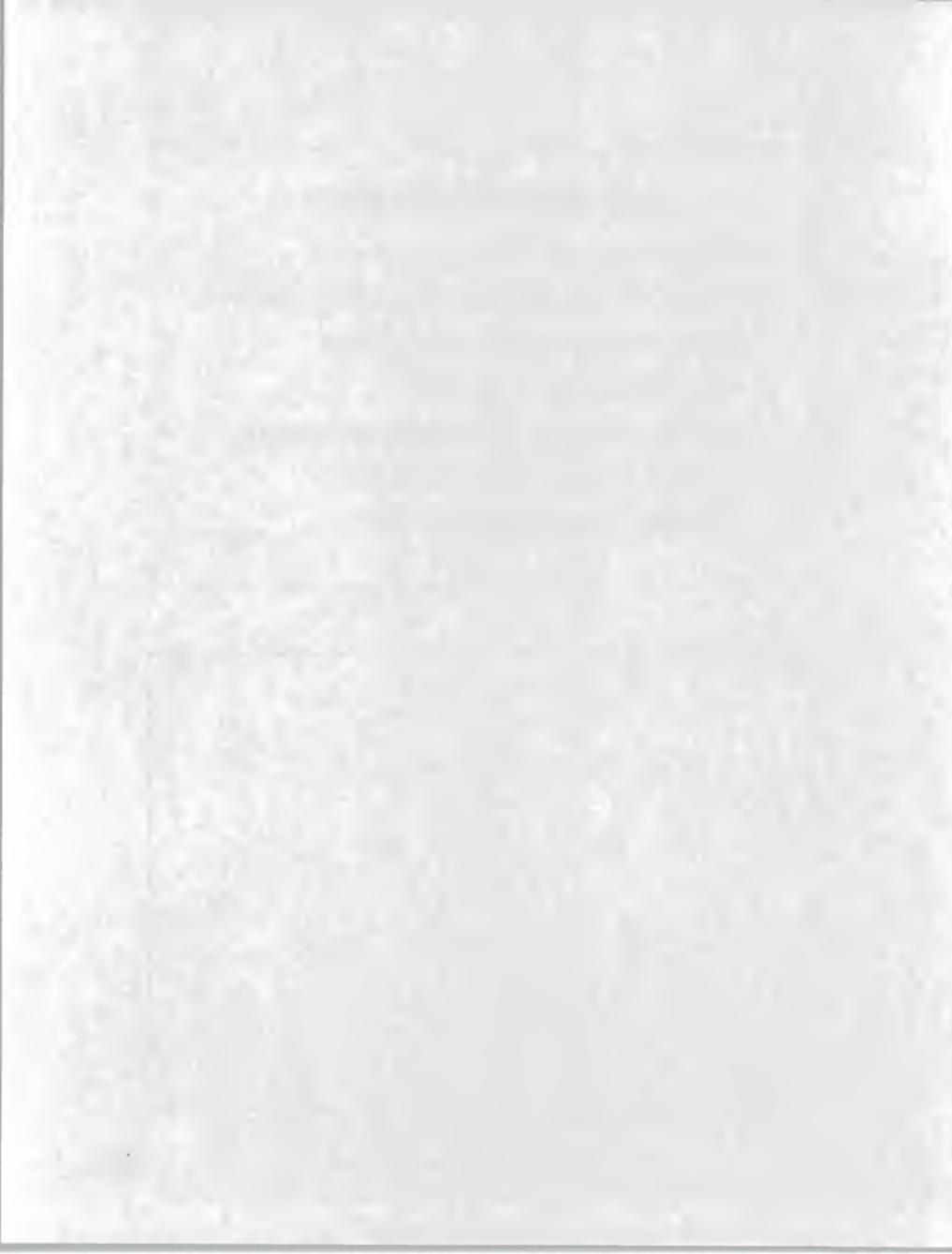
Japanese Vendors

- Large companies already exist
- Close scrutiny of U.S., European markets
- Cautious approach to investment
- Alliances likely to come first
- Entering markets with Japanese clients
- Usually part of corporate family
- Attacking secondary markets

INPUT

CT-29

Notes



Summary and Conclusions

SC-1a

INPUT

Notes



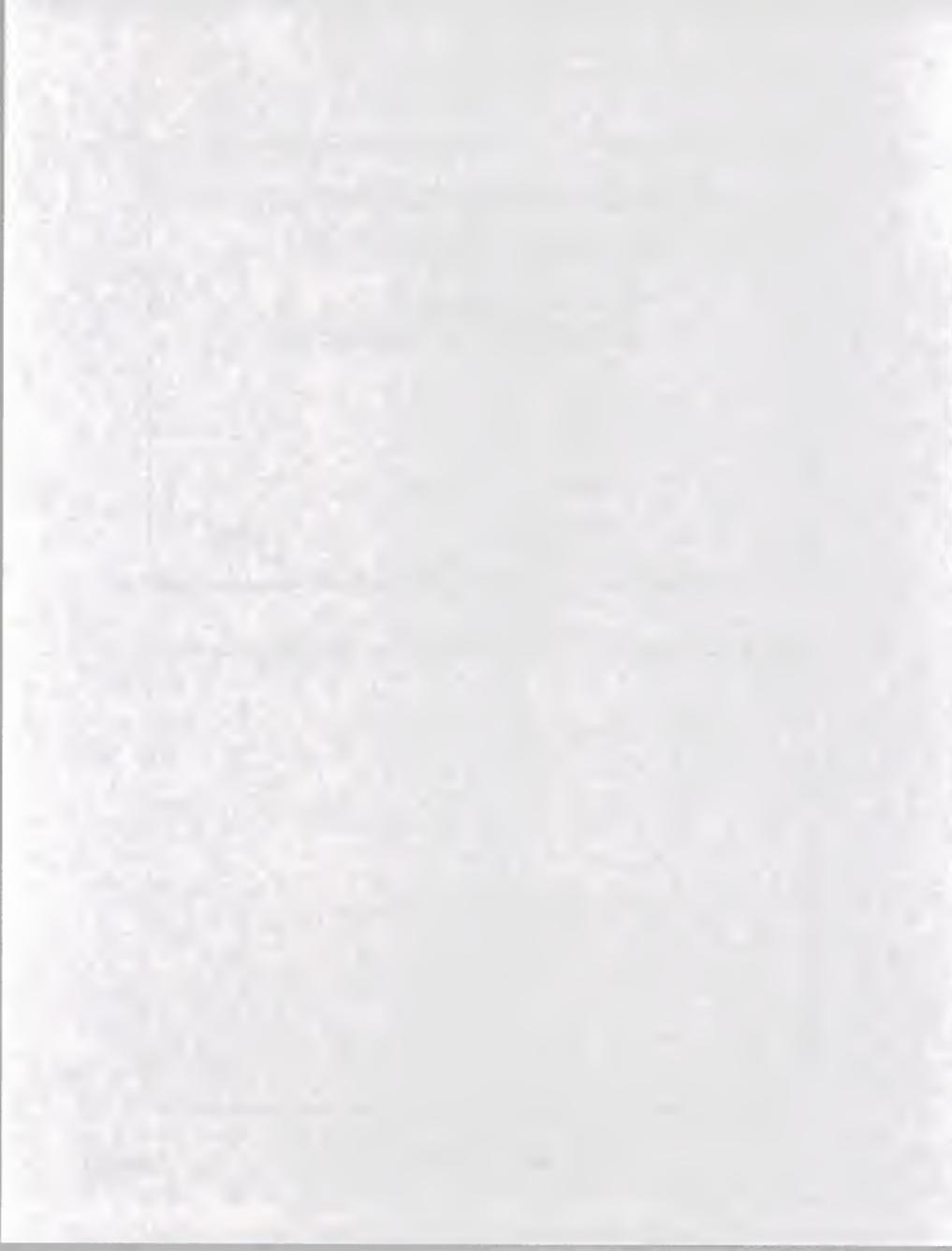
Environment for Information Services in Year 2000

- Worldwide network infrastructure in place (ISDN)
 - Voice
 - Data
 - Text
 - Graphics

INPUT

SC-2

Notes



Environment for Information Services in Year 2000

- Simultaneous language translation/transmission
- Active home/consumer use of videotex, data base access

SC-3

INPUT

Notes



Environment for Information Services in Year 2000

- Image processing is routine
- Portable, desktop computers used by all professional/clerical/managerial workers
- Standards in place for OS, graphical interfaces

INPUT

SC-4

Notes



Environment for Information Services in Year 2000

- Fewer hardware vendors
- Solutions delivered, not products
- Software customized by nonprogrammers

INPUT

SC-5

Notes



Conclusions

- Shorter lifecycle calls for fast response
- People skills/retention are key
- Internationalism to increase
- Technology creates opportunities

SC-7

INPUT

Notes



Conclusions

- Services (people) will be the key
 - Recruiting
 - Compensation
 - Motivation
 - Training
- Targeted, disciplined marketing
- Have platforms that serve all markets
- Develop 'critical mass' in target markets
- Seek leverage from standards

INPUT

SC-8a

Notes



Conclusions

- Double-digit annual growth for all vendors
- no longer "automatic"
- Worldwide markets offer real opportunities

SC-8b

INPUT

Notes



Opportunity for 1990s

- Attack in-house budgets
- Opportunity \$75-100 billion/year in U.S.

INPUT

SC-11

Notes

